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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/807,387	06/29/2001	Francois Dubarre	Q64043	5977

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EXAMINER

BAREFORD, KATHERINE A

ART UNIT

PAPER NUMBER

1762

DATE MAILED: 01/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/807,387

Applicant(s)

DUBARRE ET AL.

Examiner

Katherin A. Bareford

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>7</u> . | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because the claim lacks grammatical clarity.

Correction is required. See MPEP § 608.01(b).

For example, at lines 10-11 of the abstract page and line 13 of the abstract page, sentences are provided which are grammatically unclear. Furthermore, at the end of the Abstract page, the lines starting "Translation of the title. . ." should be removed as unclear as to how these are part of the Abstract.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 16-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 16, lines 1-2, indicates that this claim is to a "device" or apparatus, "for implementing the method according to any preceding claim". This claim is indefinite. Any claim that claims both an apparatus and the method steps of using the apparatus is indefinite. See MPEP 2173.05(p), see part II. Due to this indefiniteness as to what is required, for the

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purposes of examination, the Examiner has treated the claim as only requiring the device features listed in claim 16 itself.

Claim 22, lines 1-4, the use of the term "skirt" is confusing when it appears that belt is meant.

The other dependent claims do not cure the defects of the claims from which they depend.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims 16-30 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 16, lines 1-2, indicates that this claim is to a "device" or apparatus, "for implementing the method according to any preceding claim". This claim is non-statutory. Any claim that claims both an apparatus and the method steps of using the apparatus is non-statutory, because the claim is directed to neither "a process" nor "a machine", but rather embraces or overlaps two different statutory classes of invention set forth in 35 USC 101, which is drafted so as to set forth the statutory classes of invention in the alternative only. See MPEP 2173.05(p), see part II.

The other dependent claims do not cure the defects of the claims from which they depend.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 2, 4, 10, 16, 17, 19, 23, 24 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Japan 02-241737 (hereinafter '737).

'737 teaches a method of continuously coating a metal strip with a polymer composition. Abstract and figure 1. The strip has an external face to be coated. Abstract and figure 1. The strip has an internal face opposite the external face to be coated. Abstract and figure 1. The strip is fed continuously over a heated support roller with a non-deformable metal surface. Abstract and figure 1 (roll 1 can be made from metal, for example). Polymer composition is applied to the external face of the strip using application means that includes the support roller. Abstract and figure 1. The strip is heated before, during and after application through contact of its internal face with the support roller. Abstract and figure 1 (note that roll 1 can be heated).

Claim 2: the metal strip can be preheated before it is fed over the support roller. Abstract and figure 1 (note the preheating unit).

Claim 4: the polymer composition can be applied by rolling the composition between an applicator roller with a deformable surface and the strip bearing on the support roller. Abstract and figure 1 (extrusion into the nip between roll 2, which can be made of rubber, and roll 1).

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Claim 10: the polymer composition can be a thermoplastic composition. Abstract. The coated strip can be cooled after application and after the strip has left contact with the support roller. Abstract and figure 1 (the cooling unit 7).

Claim 16: A device is provided for implementing the coating process. Abstract and figure 1. Means is provided for applying a layer of polymer composition to the external face of the strip. Abstract and figure 1 (The extruding die 5 and support roller 1 and applicator roller 2 would correspond to the extruder, support roller and applicator roller taught by applicant). A support roller provided with heating means. Abstract and figure 1 (note that roller 1 can be heated). Means is provided for feeding the strip continuously and defining a feed path of the strip in said device. Abstract and figure 1 (the roller 2 also feeds strip and defines a feed path, corresponding to applicants support roller). The support roller has a non-deformable metal surface. Abstract and figure 1 (the roller 1 can be made from metal, for example). The feed means provides the strip over the support roller with its internal face held in contact with the surface of the roller before, during and after application of the polymer layer. Abstract and figure 1.

Claim 17: additional means are provided for preheating the strip to be coated before it reaches the support roller. Abstract and figure 1 (The preheating unit would appear to correspond to the preheating means of applicant).

Claim 19: the application means includes an applicator roller with a deformable surface indirectly bearing on the support roller through the strip so as to form rolling means. Abstract

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and figure 1 (roll 2, which can be made of rubber, and roll 1, which correspond to the applicator and support roller of applicant).

Claim 23: means for extruding the composition in the molten state is provided. Abstract and figure 1 (the extruder 5 would correspond to the extruder of applicant).

Claim 24: means for cooling the strip downstream of the feed roller is provided. Abstract and figure 1 (the cooling unit 7 with water spray would correspond to cooling means of applicant).

Claim 26: the cooling means can include water spray. Abstract and figure 1.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japan 02-241737 (hereinafter "737").

"737 teaches all the features of these claims, as discussed in the 35 USC 102(b) rejection above, except the state of the polymer composition on application (claims 5,6,7).

However, "737 does teach that the polymer is melted and extruded from the extruder. See the abstract.

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify '737 to apply the material so that it is either molten or solid on impact with the metals strip with an expectation of desirable coating results, because '737 teaches that the material is melted and extruded and that it further contacts a heated strip and is pressed against the strip to be coated/laminated to the strip. One of ordinary skill in the art would expect good results from a coating molten at impact, because the coating is extruded in a melted state and is further to be heated and pressed on impact. One of ordinary skill in the art would also expect good results from a coating that is solid at impact, because the preheated nature of the strip and the pressing would remelt the coating sufficiently to provide a desirable bond with the strip.

10. Claims 3, 11, 13-15, 18 and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over '737 as applied to claims 1, 2, 4, 10, 16, 17, 19, 23, 24 and 26 above, and further in view of Japan 06-079801 (hereinafter '801).

'737 teaches all the features of these claims except (1) the post heating of the metal strip (claim 3, 18), (2) the cooling by quenching (claim 11), (3) the internal face coating (claim 13, 14, 27, 28), and (4) the non-stick layer on the support roll (claim 15, 29).

'801 teaches a method of continuously coating a metal strip with a polymer composition. Abstract and figures 1-2. The strip has an external face to be coated. Abstract and figures 1-2. The strip has an internal face opposite the external face to be coated. Abstract and figures 1-2. The strip is fed continuously over a support roller. Abstract and figure 1 (roll 4, for example). Polymer composition is applied to the external face of the strip using application means that

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includes the support roller. Abstract and figures 1-2. '801 further teaches that the second, internal side of the strip can be coated by feeding the strip to a second identical coating applicator system that coats the internal side of the roll. Abstract and figures 1-2. '801 further teaches heating the metal strip after the coating is applied to the external and internal faces and from the support rolls to enhance adhesion. Abstract and figures 1-2 (note heating device 12) '801 further indicates that cooling of the coated strip can be accomplished with a water spray or quenching. See the translation of the Detailed Description, paragraph [0052] and [0062].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify '737 to provide post heating of the metal strip, cooling by quenching and the coating of the internal face of the strip with a duplicate coating apparatus as suggested by '801 with an expectation of desirable coating results, because '737 teaches a process for coating a metal strip with a thermoplastic resin using a support roller, applicator roller and a extruder nip and '801 teaches that when coating a metal strip with a thermoplastic resin using a support roller, applicator roller and extruder nip, (1) it is desirably known to post heat the strip after coating to enhance adhesion, (2) it is desirable to cool with water after coating by quenching or water spraying ('737 also teaches cooling with, for example, water spray), (3) and that it is desirably known to coat the other, internal, face of the strip after coating the external face using a duplicate coating apparatus. Since the quenching with water would be suggested as desired, it would have been obvious that the resulting structure from quenching would be obtained. It further would have been obvious to provide that the surface of the support roller is non-stick, because '737 teaches that the support roll can be rubber, metal or the like, and while different materials can be

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used, it would be desirable that no coating or other materials stick to the roll so that the strip can be moved continuously.

11. Claims 6 and 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over '737 as applied to claims 1, 2, 4, 10, 16, 17, 19, 23, 24 and 26 above, and further in view of McIntyre (US 4871593).

'737 teaches all the features of these claims except (1) applying the coating in a molten state (claim 6), (2) applying coating to an applicator roller with a deformable surface and then transferring to the strip (claim 8) and (3) that the polymer is thermosetting and post treatment cured (claim 9).

McIntyre teaches a method of continuously coating a moving strip with a polymer composition. Column 1, lines 5-15 and figure 1. The strip has an external face to be coated. Figure 1. The strip has an internal face opposite the external face to be coated. Figure 1. The strip is fed continuously over a support roller. Figure 1 and column 3, lines 30-40 (roll 8). Polymer composition is applied to the external face of the strip using application means that includes the support roller. Figure 1 and column 2, line 50 through column 3, line 50. McIntyre further teaches applying the molten polymer composition onto an applicator roll. Figure 1 and column 2, line 50 through column 3, line 50. The composition is transferred in a molten state to the strip to be coated. Figure 1 and column 2, line 50 through column 3, line 50. The composition can be a thermosetting composition. Column 5, lines 1-10. The composition on the strip can be cured after coating. Column 5, lines 1-10.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify '737 to provide applying the coating in a molten state, applying coating to an applicator roller with a deformable surface and then transferring to the strip, and that the polymer is thermosetting and post treatment cured as suggested by McIntyre with an expectation of desirable coating results, because '737 teaches a process for coating a metal strip with a resin using a support roller, applicator roller and a extruder nip and McIntyre teaches that when coating a strip with a resin using a support roller, applicator roller and extruder, (1) it is desirably known apply the coating in a molten state, (2) it is desirable to apply the coating first to the applicator roll and then transfer to the strip and (3) and that it is desirably known to use a thermosetting resin and to cure the resin after coating.

12. Claims 12, 20-22 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over '737 as applied to claims 1, 2, 4, 10, 16, 17, 19, 23, 24 and 26 above, and further in view of Fujii et al (US 5658514).

'737 teaches all the features of these claims except (1) applying applicator roller is cooled directly (claim 12, 20, 21), (2) the metal skirt cooling for the applicator roller (claim 22), and (3) cooling the strip with a cooling roller (claim 25).

Fujii teaches a method of continuously forming a moving strip of a polymer composition. Column 1, lines 5-15 and figure 2. The formed strip has an external face. Figure 2. The strip has an internal face opposite the external face. Figure 2. The strip is fed continuously over a support roller. Figure 2 and column 7, lines 15-35 (pressure roll 6, for example). Polymer

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composition is applied to form the strip using application means that includes the support roller. Figure 2 and column 7, lines 15-35. Fujii further teaches using cooled backing rolls and cooling rolls, around which traverses a metal belt in order to cool the strip. Figure 2 and column 7, lines 20-65. The rolls are cooled, which in turn cool the strip. Figure 2 and column 7, lines 20-65. Auxillary cooling rolls are provided that further cool the belt that then contacts further cooling rolls, and thus provides a direct cooling means with skirt to the extent claimed. Figure 2 and column 7, lines 20-65. Metal cooling rolls can also be provided. Figure 2 and column 7, lines 20-68 (see roll 4). A directly cooled roll (roll 7) can be provided to form a nip with the support roll (pressure roll 6). Figure 2 and column 7, lines 55-65.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify '737 to provide an applicator roll that is cooled directly, the metal skirt cooling for the applicator roller and cooling the strip with a cooling roller as suggested by Fujii with an expectation of desirable coating results, because '737 teaches a process for coating a metal strip with a resin using a support roller, applicator roller and a extruder nip and Fujii teaches that when extruding a resin strip using a support roller, applicator roller and extruder, it is conventionally known to cool the resin using cooling rolls and belts cooled by cooling rolls, including nip rolls. These belts and cooling rollers would correspond to the structure taught by applicant (see figure 9, for example).

13. Claims 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over '737 in view of '801 as applied to claims 3, 11, 13-15, 18, and 27-29 above, and further in view of Fujii et al (US 5658514).

'737 in view of '801 teaches all the features of these claims except the cooling rolls on both sides of the strip to cool both faces.

Fujii teaches a method of continuously forming a moving strip of a polymer composition. Column 1, lines 5-15 and figure 2. The formed strip has an external face. Figure 2. The strip has an internal face opposite the external face. Figure 2. The strip is fed continuously over a support roller. Figure 2 and column 7, lines 15-35 (pressure roll 6, for example). Polymer composition is applied to form the strip using application means that includes the support roller. Figure 2 and column 7, lines 15-35. Fujii further teaches using cooled backing rolls and cooling rolls, around which traverses a metal belt in order to cool the strip. Figure 2 and column 7, lines 20-65. The rolls are cooled, which in turn cool the strip. Figure 2 and column 7, lines 20-65. Auxillary cooling rolls are provided that further cool the belt that then contacts further cooling rolls, and thus provides a direct cooling means with skirt to the extent claimed. Figure 2 and column 7, lines 20-65. Metal cooling rolls can also be provided. Figure 2 and column 7, lines 20-68 (see roll 4). A directly cooled roll (roll 7) can be provided to form a nip with the support roll (pressure roll 6). Figure 2 and column 7, lines 55-65. The cooling rolls can be provided to contact both faces of the strip. Figure 8 and column 11, lines 35-55, for example, the auxiliary cooling at the end of the strip passage.

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify '737 in view of '801 to provide an cooling rolls on both sides of the strip as suggested by Fujii with an expectation of desirable coating results, because '737 in view of '801 teaches a process for coating a metal strip with a resin on both sides followed by a cooling treatment and Fujii teaches that when extruding a resin strip using a support roller, applicator roller and extruder, it is conventionally known to cool the resin using cooling rolls on both sides of the strip. If desired it would have further been obvious to use the cooling rolls for the auxiliary cooling at the end of the strip passage in the form of rollers with no belt with an expectation of desirable coating results, because, as shown by Fujii, cooling can desirably be performed by a cooling roller with or without a surrounding belt (see rollers 38 and 39, for example).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katherine A. Bareford whose telephone number is (703) 308-0078. The examiner can normally be reached on M-F(7:00-4:30) with the First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P. Beck can be reached on (703) 308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Kath A Bareford
KATHERINE A. BAREFORD
PRIMARY EXAMINER
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